

What is claimed is:

1. A cam mechanism for a lens barrel, comprising:
an annular member which is linearly guided along an optical axis, said annular member having at least one cam follower on an outer peripheral surface thereof;
a cam ring having at least one cam groove on an inner peripheral surface thereof, said cam groove including a photographing section for moving said annular member to a ready-to-photograph position thereof, and an accommodation section for positioning said annular member to an accommodation position thereof at which no photographing operation is performed, said cam follower being engaged in said cam groove; and
a biasing device for biasing said annular member forward to normally press said cam follower against a front cam surface in said cam groove,
wherein a rear end portion of said cam groove is open at a rear end surface of said cam ring to serve as said accommodation section, and
wherein said cam follower is disengageable from said front cam surface in said cam groove against a biasing force of said biasing device when said cam follower is engaged in said accommodation section.
2. The cam mechanism according to claim 1, further comprising a linear guide ring which is linearly guided

along said optical axis and positioned inside said cam ring,

wherein said cam ring comprises a circumferential groove formed on an inner peripheral surface of said cam ring in the vicinity of a rear end thereof;

wherein said linear guide ring comprises an outer flange which is formed on an outer peripheral surface of said linear guide ring to be engaged in said circumferential groove in a manner so that a relative rotation between said outer flange and said circumferential groove about said optical axis is possible and so that said outer flange and said circumferential groove are prevented from moving relative to each other along said optical axis;

wherein said accommodation section overlaps said circumferential groove; and

wherein said outer flange includes at least one cut-out portion which allows said cam follower to enter said cut-out portion when said annular member is in said accommodation position.

3. The cam mechanism according to claim 1, wherein said lens barrel comprises a photographing optical system including an optical member supported by said annular member,

wherein said optical member includes at least one

intermediate lens group of said photographing optical system, and

wherein a lens frame of a front lens group of said photographing optical system which is positioned in front
5 of said intermediate lens group is in contact with said annular member when said annular member is in said accommodation position.

4. The cam mechanism according to claim 3, wherein said biasing device comprises a coil spring positioned
10 between said annular member and a lens frame of a rear lens group of said photographing optical system which is positioned behind said intermediate lens group.

5. The cam mechanism according to claim 4, wherein said lens frame of said rear lens group is in contact with
15 a light shield plate provided in said lens barrel by spring force of said coil spring when said annular member is in said accommodation position.

6. The cam mechanism according to claim 1, wherein said lens barrel comprises a zoom lens barrel, and
20 wherein said photographing section is formed so as to move said annular member to a ready-to-photograph position thereof among a plurality of ready-to-photograph positions corresponding to a plurality of different focal lengths.

25 7. The cam mechanism according to claim 1, wherein

said accommodation section is elongated in a circumferential direction of said cam ring.

8. The cam mechanism according to claim 1, wherein said optical member, which is supported by said annular member, comprises a shutter unit which is fixed to said annular member.

9. The cam mechanism according to claim 1, wherein said annular member comprises:

a ring portion with a center thereof on said optical axis; and

at least one guide arm which projects rearward from said ring portion to be linearly guided along said optical axis, wherein said cam follower extends radially outwards from said guide arm.

10. The cam mechanism according to claim 5, wherein said lens barrel comprises a telescoping type zoom lens barrel having a plurality of external telescoping barrels, said light shield plate being fixed to a rear end of an outermost external telescoping barrel of said plurality of external telescoping barrels.

11. A cam mechanism for a lens barrel, comprising:
an annular member which holds at least one lens group at a center of said annular member, and is linearly guided along an optical axis, said annular member including at least one cam follower; and

a cam ring positioned coaxially with said annular member and having at least one cam groove, wherein rotation of said cam ring causes said annular member to move along said optical axis due to engagement of said cam groove with
5 said cam follower formed on said annular member;

wherein said cam groove includes a photographing section for moving said annular member to a ready-to-photograph position thereof, and an accommodation section for positioning said annular member to a retracted position
10 positioned behind said ready-to-photograph position in said optical axis direction,

wherein a rear end portion of said cam groove is open at a rear end surface of said cam ring to be formed as said accommodation section,

15 wherein said cam follower is normally pressed against a front cam surface in said cam groove by a biasing device, and

wherein said cam follower is disengageable from said front cam surface in said cam groove against said spring
20 force of said biasing device when engaged in said retracting section.